Dr. Jingxin Wang, Benedum Distinguished Scholar
Davis Michael Professor of Forestry and Natural Resources
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EDUCATION

Jilin Forestry College, Jilin, CHINA	B.S.	1983	Forest/Mechanical Engineering
Northeast Forestry University, Harbin, CHINA	M.S.	1986	Forest/Mechanical Engineering
Northeast Forestry University, Harbin, CHINA	Ph.D.	1990	Forest/Mechanical Engineering
West Virginia University, Morgantown, WV	M.S.	2005	Computer Science
The University of Georgia, Athens, GA	Ph.D.	1997	Forest Resource Management

PROFESSIONAL EMPLOYMENT

2021 – Present. Director of Center for Sustainable Biomaterials & Bioenergy, West Virginia University, Morgantown, WV.

2013 – Present. Associate Director for Research. Division of Forestry and Natural Resources, West Virginia University, Morgantown, West Virginia, USA.

2011 – Present. Professor of Wood Science and Technology, Division of Forestry and Natural Resources, West Virginia University, Morgantown, WV.

2006 – 2021. Director of Renewable Materials and Bioenergy Research Center, Division of Forestry and Natural Resources, West Virginia University, Morgantown, WV.

2006 – 2013. Program Coordinator of Wood Science and Technology Program, Division of Forestry and Natural Resources, West Virginia University, Morgantown, West Virginia, USA.

2006 – 2011. Associate Professor of Wood Science and Technology, Division of Forestry and Natural Resources, West Virginia University, Morgantown, WV.

2000 – 2006. Assistant Professor. Division of Forestry, West Virginia University, Morgantown, WV.

1998 – 2000. Systems Programmer/Analyst. Computer Sciences Corporation, Financial Services Group, Atlanta, Georgia.

1994 – 1998. Research Assistant/Coordinator. Warnell School of Forest Resources, The University of Georgia, Athens, Georgia.

1993 – 1994. Visiting Associate Professor. Department of Forest Resource Management, University of Helsinki, Helsinki, Finland.

1986 – 1993. Assistant and Associate Professor. Department of Forest Engineering, Northeast Forestry University, Harbin, China.

SYNERGISTIC ACTIVITIES

- Led and coordinated transdisciplinary research teams across three colleges at WVU, with collaborators from other universities, government agencies and industry partners in the region.
- Served as chair/co-chair/member in six national/international professional societies, including, SAF, FPS, ASABE, SWST, IUFRO.
- Served as an editorial board member/associate editor for four international journals such as Forest Science, Forest Ecosystems, and International J. of Forest Engineering.
- Served as PI/Co-PI for several ongoing USDA or USDOE funded projects on biomaterials and bioenergy.

HONORS AND AWARDS

- 2021, 2014, 2011, and 2005. Outstanding Researcher. The Davis College of Agriculture, Natural Resources and Design, West Virginia University, Morgantown, West Virginia.
- 2018. Outstanding Natural Resource Educator. West Virginia University School of Natural

Resources Alumni Association. Morgantown, WV.
- 2016 The Benedum Distinguished Scholar Award. West Virginia University. Morgantown, WV.
- 2008 Bioenergy Awareness Days "Grand Challenge" Winner, the United States Department of Agriculture, Washington, DC.
- 2007 The Mid-Career Award. The Davis College of Agriculture, Forestry, and Consumer Sciences, West Virginia University, Morgantown, West Virginia.
- 2006 The Hoyt Faculty Excellence Award. The Hoyt Foundation, West Virginia University, Morgantown, West Virginia.

SELECTED GRANTS RECEIVED

1. PI, Mid-Atlantic Sustainable Biomass for Value-Added Products Consortium (MASBio). (Funded by USDA NIFA, $10,000,000)
2. PI, Advancing forest logging residue harvesting and collection logistics in the Eastern United States. (Funded by USDA NIFA, $1,000,000)
3. PI, Enhancing the nanostructure of the lignocellulosic cell wall as a natural template for highly-ordered mesoporus carbons. (Funded by USDA NIFA, $496,168)
4. PI, Strengthening a wood energy team to facilitate bio-business development. (Funded by USDA Forest Service, $250,000)
5. PI, Economic and environmental impacts of woody biomass utilization for bioenergy in the central Appalachian region. (Funded by USDA NIFA, $350,000)
6. PI, Integrated life cycle and techno-economic assessments of Central Appalachian legacy mine sites for biomass development and utilization. (Funded by US DOE, $400,000)
7. Co-PI, Developing a Regional Education Program in Sustainable Land Reclamation Management in Central Appalachia. (Funded by USDA NIFA, $497,266)
8. Co-PI, Unique nanotechnology converts carbon dioxide to valuable products. (Funded by US DOE, $1,000,000)
9. Co-PI (WVU PI), Improved advanced biomass logistics utilizing woody and other feedstocks in the Northeast and Pacific Northwest. (Funded by US DOE, $3,000,000)
10. Co-PI (WVU PI), The Northeast Woody/Warm-season Biomass Consortium. (Funded by USDA NIFA, $10,000,000)

GRADUATE STUDENTS MENTORED OR TRAINED (Total Graduate Advisees as Chair = 25)

Graduated as Chair: Dr. Yaoxiang Li, Northeast Forestry U.; Dr. Mike Vanderberg, WVU; Tony Goff, USDA FSA; Dr. Jingang Liu, Caterpillar Inc.; Greg Hamons, WVU Extension; Mark Jones, AWP International; Charlie Long, WV DNR; William Sharp, WV DNR; Dr. Jinzhuo Wu, Northeast Forestry U.; Dr. Adebola Adebayo, PA; Dr. Benktesh Sharma, Terra Global Capital, CA; Sabina Dhungana, Kansas State U.; Mike Jacobson, Marucci Wood Mill, PA; Pradip Saud, Oklahoma State U.; Dr. Wenshu Lin, NEFU. David Summerfield, ISK, GA. Dr. Damon Hartley, DOE INL, ID; Dr. Weiguo Liu, China. Dr. Zhen Yu, Iowa State U, Amy Falcon, DOE NETL; Mr. John Vance, WVU; Dr. Changle Jiang, WVU; Dr. Yuxi Wang, WVU; Dr. Xufeng Zhang, China; Dr. Wanhe Hu, WVU; Mr. William Smith, Hocking College.

Graduated as Committee Member: Wes Bailes, Michael Fiery, Lichun Jiang, Matthew, Perkowski, Shawn Grushecky, Ivan Anastasov, Liberty Moya, Jagpinder Brar, S. Kumar, Wenjia Jin, Nan Nan, Kevin Harris, Chirag Mevawala.

Current Graduates as Chair: Jinghan Zhao, Ph.D. (2026), Debsree Mandal, Ph.D. (2026); Bibek Aryal, M.S. (2024).

Post-Docs Mentored: George Cheng, Auburn Univ.; Clay Altizer, NC Forestry; Rory Jara, Renmatix; Jidong Ma, NEFU; Xinfeng Xie, Michigan Tech; Kui Wang, CAF; Junmin Xu, CAF, China; Chunyu Zhang, BFU, China; Nan Nan, Louisiana Tech University; Wanhe Hu, WVU.

SELECTED RELEVANT PUBLICATIONS (over the last five years)

Refereed Journal Papers

1. Ye, Y., H. Wang, J. Luan. J. Ma, A. Ming, B. Niu, C., Liu, Z. Freedman, **J. Wang**, and S. Liu. 2023. Nitrogen-fixing tree species modulate species richness effects on soil aggregate-associated organic carbon fractions. Forest Ecology and Management. 546 (2023) 121315. https://doi.org/10.1016/j.foreco.2023.121315.
2. Yang, H., S. Liu, **J. Wang**, J. Schuler, Y. Wang, and J. Luan. 2023. Nitrogen-fixing plants enhance and stabilize rhizospheric soil organic carbon in tropical rainforests, Hainan Island, China. Forest Science. https://doi.org/10.1093/forsci/fxad037.
3. Jiang, C., J. Hu, C. Zhang, G. Hota, **J. Wang**, and N. Ahkmedov. 2023. Lignin Oligomers from Mild Base-catalyzed Depolymerization for Potential Application in Aqueous Soy Adhesive as Phenolic Blends. Reaction Chemistry & Engineering. Reaction Chemistry & Engineering, 2023, https://doi.org/10.1039/D3RE00224A.
4. Hu, W., **J. Wang**, J. Hu, J. Schuler, S. Grushecky, N. Nan, W. Smith, and C. Jiang. 2023. Thermodegradation of naturally decomposed forest logging residues: Characteristics, kinetics, and thermodynamics. Bioresource Technology. 376 (2023) https://doi.org/10.1016/j.biortech.2023.128821.
5. Wang, H., Y. Ding, Y. Zhang, **J. Wang**, Z. Freedman, P. Liu, W. Cong, J. Wang, R. Zang, S. Liu. 2023. Evenness of soil organic carbon chemical components changes with tree species richness, composition and functional diversity across forests in China. Global Change Biology. 2023;00:1-13. DOI: 10.1111/gcb.16653.
6. Vance, J., **J. Wang**, S. Grushecky, X. Zhang, and R. Spinelli. 2023. Chipping Operations and Chip Quality from Mixed Hardwood Forests for Bioenergy. International Journal of Forest Engineering. DOI: 10.1080/14942119.2023.2187677.
7. Wang, H., Z. Song, **J. Wang**, Y. Yang. J. Wang and S. Liu. 2022. The quadratic relationship between tree species richness and topsoil organic carbon stock in a subtropical mixed-species planted forest. European Journal of Forest Research. 141(6). DOI:10.1007/s10342-022-01498-w.
8. Grushecky, S., K. Harris, M. Strager, **J. Wang**, and A. Mesa. 2022. Land Cover Change Associated with Unconventional Oil and Gas Development in the Appalachian Region. Environmental Management. https://doi.org/10.1007/s00267-022-01702-y.
9. Li, Q., Z. Bao, N. Akhmedov, B. Li, Y. Duan, M. Xing, **J. Wang**, B. Morsi, Bing Li. 2022. Unravelling the Role of Glycine in K2CO3 Solvent for CO2 Removal. Industrial & Engineering Chemistry Research. DOI: https://doi.org/10.1021/acs.iecr.2c01637.
10. Nan, N., W. Hu, and **J. Wang**. 2022. Lignin-based porous biomaterials for medical and pharmaceutical applications. Biomedicines. 2022,10,747 https://doi.org/10.3390/biomedicines10040747.
11. Zhang, X., **J. Wang**, and M. Strager. 2022. Industrial development and economic impacts of forest biomass for bioenergy and bioproducts: A data-driven holistic analysis framework. Resources, Conservation & Recycling. 182 (2022) 106296. https://doi.org/10.1016/j.resconrec.2022.106296.
12. Bao Z, Q. Li, N. Akhmedov, M. Xing, J. **Wang**, B. Morsie B, B. Li. 2022. Innovative cycling reaction mechanisms of CO2 absorption in amino acid salt solvents. Chem Eng J Adv 10(2022) 100250. https://doi.org/10.1016/j.ceja.2022.100250.

13. Wang, Y., **J. Wang**, X. Zhang, D. Debangsu, and E. Sabolsky. 2022. Quantifying Environmental and Economic Impacts of Highly Porous Activated Carbon from Lignocellulosic Biomass for High-Performance Supercapacitors. Energies 2022, 15, 351. https://doi.org/10.3390/en15010351.
14. Wickramasinghe, S., **J. Wang**, B. Morsi, and B. Li. 2021. Carbon Dioxide Conversion to Nanomaterials: Methods, Applications, and Challenges. Energy & Fuels. https://pubs.acs.org/action/showCitFormats?doi=10.1021/acs.energyfuels.1c01533&ref=pdf. Impact Factor 3.605
15. Huang, X., S. Liu, Y. You, **J. Wang**, Y. Wen, W. Shen, X. Tan, and G. Dahle. 2021. Different mechanisms underlying the divergent responses of soil respiration components to an introduction of N2-fixer tree species into Eucalyptus plantations. Agricultural and Forestry Meteorology. https://doi.org/10.1016/j.agrformet.2021.108536. Impact Factor 5.794
16. Yang, Y. S. Liu, A. Schindlbacher, **J. Wang**, Z. Li. H. Wang, A. Ming, L Lu, and Z. Li. 2021. Topsoil organic carbon increases but its stability declines after five years of reduced throughfall. Soil Biology and Biochemistry. 156(2021) 108221. https://doi.org/10.1016/j.soilbio.2021.108221. Impact Factor 7.17
17. Wang, Y., **J. Wang**, X. Zhang, and S. Grushecky. 2020. Environmental and Economic Assessments and Uncertainties of Multiple Lignocellulosic Biomass Utilization for Bioenergy Products: Case Studies. Energies 2020, 13, 6277; doi:10.3390/en13236277. Impact Factor 3.004
18. Zhang, X., S. Liu, **J. Wang**, Y. Huang, Z. Freedman. S. Fu, K, Liu, J. Wang, X. Li, M. Yao, X. Liu, and J. Schuler. 2020. Local community assembly mechanisms shape soil bacterial β-diversity patterns along a latitudinal gradient. Nature Communications. (2020) 11:5428 | https://doi.org/10.1038/s41467-020-19228-4 |www.nature.com/naturecommunications. Impact Factor 14.92
19. Yakaboylu, G., T. Yumak, C. Jiang, J. Zondlo, **J. Wang**, E. Sabolsky. 2020. Engineered hierarchical porous carbons for supercapacitor applications through chemical pretreatment and activation of biomass precursors. Renewable Energy. 163(2021)276-287. https://doi.org/10.1016/j.renene.2020.08.092. Impact Factor 8.001
20. Wang, Y., **J. Wang**, J. Schuler, D. Hartley, T. Volk, and M. Eisenbies. 2020. Optimization of harvest and logistics for multiple lignocellulosic biomass feedstocks in the Northeastern United States. Energy. https://doi.org/10.1016/j.energy.2020.117260. Impact Factor 5.537
21. Zhang, X., **J. Wang**, J. Vance, Y. Wang, J. Wu, and D. Hartley. 2020. Data analytics for enhancement of forest and biomass supply chain management. Current Forestry Reports. DOI 10.1007/s40725-020-00111-w. Impact Factor 3.951
22. Jiang, C., G. Yayaboylu, T. Yumak, J. Zondlo, E. Sabolsky, and **J. Wang**. 2020. Activated carbons prepared by indirect and direct CO2 activation of lignocellulosic biomass for supercapacitor electrodes. Renewable Energy. 155(2020) 38-52. https://doi.org/10.1016/j.renene.2020.03.111 Impact Factor 5.439
23. Poudel, R., A. Collins, K. Gazal, and **J. Wang**. 2020. Benefit transfer estimation of willingness-to-pay for U.S. wetlands conversion. Forest Policy and Economics. 115 (2020). https://doi.org/10.1016/j.forpol.2020.102157. Impact Factor 3.099
24. Hao, J., X. Wu, G. Gloria, **J. Wang**, and G. Dahle. 2020. Compression Properties and Its Prediction of Wood-Based Sandwich Panels with a Novel Taiji Honeycomb Core. Forests **2020**, 11, 886; doi:10.3390/f11080886. Impact Factor 2.116

25. Luan, J., S. Liu, S. Li, J. Whalen, Y. Wang, **J. Wang**, Y. Liu, W. Dong, and S. Chang. 2020. Functional diversity of decomposers modulates litter decomposition affected by plant invasion along a climate gradient. J. of Ecology. 2020;00:1-14. DOI: 10.1111/1365-2745.13548. Impact Factor 5.76
26. Hao, J., X. Wu, G. Gloria, W. Liu, and **J. Wang**. 2020. Structural analysis and strength-to-weight optimization of wood-based sandwich composite with honeycomb core under three-point flexural test. European J. of Wood and Wood Products. https://doi.org/10.1007/s00107-020-01574-1.
27. Wang, Y., J. Luan, S. Liu, S. Chang, and **J. Wang**. 2019. Microbe-mediated attenuation of soil respiration in response to soil warming in a temperate oak forest. Science of the Total Environment. DOI: *10.1016/j.scitotenv.2019.134563*.
28. Mi, B., **J. Wang**, H. Xiang, F. Liang, J. Yang, Z. Feng, T. Zhang, W. Hu, X. Liu, Z. Liu, B. Fei. 2019. Nitrogen self-doped activated carbons derived from bamboo shoots as a superior adsorbent for methylene blue. Molecules. 24(16): 3012. doi: 10.3390/molecules24163012.
29. Yakaboylu, G., T. Yumak, C. Jiang, J. Zondlo, **J. Wang**, E. Sabolsky. 2019. Preparation of highly porous carbon through slow oxidative torrefaction, pyrolysis and chemical activation of lignocellulosic biomass for high performance supercapacitors. Energy & Fuels. DOI: 10.1021/acs.energyfuels.9b01260.
30. Nan, N. and **J. Wang**. 2019. FIB-SEM Three-dimensional Tomography for Characterization of Carbon-based Materials. Advances in Materials Science and Engineering. https://doi.org/10.1155/2019/8680715.
31. Wang, H. S. Liu, X. Zhang, A. Ming, and **J. Wang**. 2019. Introducing nitrogen-fixing tree species and mixing with Pinus massoniana alters and evenly distributes various chemical compositions of soil organic carbon in a planted forest in southern China. Forest Ecology and Management. https://doi.org/10.1016/j.foreco.2019.117477.
32. Ma, Y., **J. Wang**, W. Tan, J. Jiang, J. Xu, and K. Wang. 2019. Directional liquefaction of lignocellulosic biomass for value added monosaccharides and aromatic compounds. Industrial Crops & Products. 135(2019): 251-259. https://doi.org/10.1016/j.indcrop.2019.04.038. Impact Factor 3.849
33. Wang, H., S. Liu, A. Schindlbacher, and **J. Wang**. 2019. Experimental warming reduced topsoil carbon content and increased soil bacterial diversity in a subtropical planted forest. Soil Biology and Biochemistry. 133(2019) 155-164. https://doi.org/10.1016/j.soilbio.2019.03.004. Impact Factor 4.926
34. Yang, B., B. Lv, N. Wang, S. Liu, Y. Zhou, J. Schuler, Q. Hao, and **J. Wang**. 2018. Why *Vatica mangachapoi* shows stronger capability of natural regeneration in the coastal barren sandy soil-seed rain dynamic? ASIA LIFE SCIENCES 27(2): 263-275, 2018.
35. Hao, J., X. Wu, G. Gloria, **J. Wang**, G.Dahle, N. Nan. 2018. Deformation and Failure Behavior of Wooden Sandwich Composites with Taiji Honeycomb Core Under a Three-Point Bending Test. Materials 2018, 11, 2325; doi:10.3390/ma11112325.
36. Yu, Z., S. Liu, **J. Wang**, X. Wei, J. Schuler, P. Sun, R. Harper, N. Zegre. 2018. Natural forests exhibit higher carbon sequestration and lower water consumption than planted forests in China. Global Change Biology. 2018;00:1–10. https://doi.org/10.1111/gcb.14484. Impact Factor 8.997
37. Wang, H., S. Liu, X. Zhang, Q. Mao, X. Li, Y. You, **J. Wang**, M. Zheng, W. Zhang, X. Lu, J. Mo. 2018. Nitrogen addition reduces soil bacterial richness while phosphorus addition alters community composition in a N-rich tropical forest. Soil Biology & Biochemistry. 127 (2018) 22-30. https://doi.org/10.1016/j.soilbio.2018.08.022
38. Luan, J., S. Liu, **J. Wang**, S. Chang, X. Liu, H. Lu, and Y. Wang. 2018. Tree species diversity promotes soil carbon stability by depressing the temperature sensitivity of soil respiration in temperate forests. Science of the Total Environment. 645 (2018) 623-629. https://doi.org/10.1016/j.scitotenv.2018.07.036

39. Zhang, X., S. Liu, Y. Huang, S. Fu, **J. Wang**, A. Ming, X. Li, M Yao, and H. Li. 2018. Tree species mixture inhibits soil organic carbon mineralization accompanied by decreased r-selected bacteria. Plant Soil. https://doi.org/10.1007/s11104-018-3755-x
40. Mi, B., X. Chen., C. Jiang, **J. Wang.** 2018. Nitrogen-doped porous carbon derived from bamboo shoot as solid base catalyst for knoevenagel condensation and transesterification reactions. Catalysts **2018**, 8, 232; doi:10.3390/catal8060232.
41. Wang, H., S. Liu, and **J. Wang**. 2018. Mixed-species plantation with *Pinus massoniana and Castanopsis hystrix* accelerates C loss in recalcitrant coniferous litter but slows C loss in labile broadleaf litter in southern China. Forest Ecology and Management. https://doi.org/10.1016/j.foreco.2018.04.024
42. Liang, X., S. Liu, H. Wang, and **J. Wang**. 2018. Variation of carbon and nitrogen stoichiometry along a chronosequence of natural temperate forest in northeastern China. Journal of Plant Ecology. 11(3): 339-350. doi: 10.1093/jpe/rtx008
43. Wu, J., L. Kong, **J. Wang**, and X. Dong. 2018. Nutrient Cycling and Biomass Flows for a Low-quality Forest Stand Improvement System in the Lesser Khingan Range of China. Journal of Sustainable Forestry. 10.1080/10549811.2018.1440245.

Book and Book Chapter

1. **Wang, J**. 2022. Forest and Biomass Harvest and Logistics. Springer Nature. Cham, Switzerland. 386 pp.
2. DeVallance, D., Wang T., Xie X., **Wang J.** 2020. Advancements in Thermochemical Modification of Wood for Bioenergy and Biomaterial Applications. In: Mitra M., Nagchaudhuri A. (eds) Practices and Perspectives in Sustainable Bioenergy. Green Energy and Technology. Springer, New Delhi. DOI: https://doi.org/10.1007/978-81-322-3965-9_10.
3. **Wang, J.** 2018. Introduction to Computing Applications in Forestry and Natural Resource Management. CRC Press Taylor & Francis Group. Boca Raton, Florida, USA. 378 pp